

DESIGN AND CONSTRUCTION GUIDELINES AND STANDARDS

DIVISION 5 • METALS

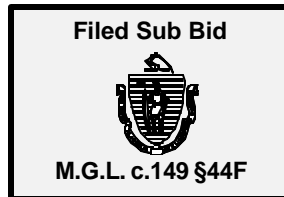
05 50 00 • MISCELLANEOUS & ORNAMENTAL IRON

SECTION INCLUDES

Handrails & Railings
Miscellaneous & Ornamental Iron
Metal Stairs

RELATED SECTIONS

03 30 00 Concrete
04 20 00 Unit Masonry
05 12 00 Structural Steel
05 56 00 Aluminum Railings
09 90 00 Painting



Miscellaneous and ornamental iron is a stipulated filed sub-bid category under MGL Chapter 149, s. 44F. If the cumulative estimated value of the work in this section exceeds \$20,000 and the project total cost is \$100,000 or greater, it triggers the filed sub-bid requirement.

Structural steel and cold formed metal framing and aluminum railings are NOT considered filed sub-bid categories.

STEEL STAIRS AND RAILINGS

MATERIALS

Specify ASTM A-123 (latest edition) requirements for hot dip galvanizing after fabrication of exterior steel work.

The galvanizing bath shall contain Special High-Grade zinc.

Galvanizing shall exhibit a rugosity (smoothness) not greater than 4 rug (16-20 microns of variation) when measured by a profilometer over a 1 inch straight line on the surface of the architectural and structural elements that are less than 24 pounds per running foot. Profilometer shall be capable of operating in 1 micron elements.

- ☐ Surface blasting prior to application of factory applied post galvanizing wet coatings will produce high rugosity and not be acceptable.

ASTM A153 specifications for zinc coatings (Hot Dip) on iron and steel hardware. Weight not less than 1.25 oz. per SF.

Require certificates of compliance with ASTM requirements for zinc coating from the galvanizer

Shop paint metal work, except members or portions of members to be embedded in concrete or masonry or surfaces to be field welded.

Any items to be field painted **shall** be shop primed by galvanizer.

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Where a complete factory applied coating system is desired, provide hot dip galvanizing and high performance ultra durable coating. Supply galvanizer's twenty (20) year warranty against rust and 10 year warranty on finish coat gloss level, adhesion, and color retention.

DESIGN

No requirements other than standard professional practice and code requirements.

When existing stairs are being replaced and they are covered with lead based paint specify that the stairs shall be sent to a recycling facility. This way they do not have to be considered hazardous waste.

Bases of exterior pipe railings and columns should have a weep just above finish grade or slab, or tops must have welded covers. Water collection can freeze and crack steel pipe columns. Even with weep holes water can collect below the weep and rot out the bottom of the railing.

EXECUTION

Careful review of shop drawings goes a long way to getting a well executed project.

No requirements other than standard professional practice.

ALUMINUM RAILINGS

Aluminum railings are not required as part of a filed sub trade. They should be listed in a separate trade section to avoid being overlooked as part of a contract. See Section 05 56 00.

Aluminum railings create possible anchoring and expansion and contraction challenges. Especially when there are long lengths of railing, both vertically and horizontally

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OTHER SHOP- FABRICATED METALS

MATERIALS

Loose lintels, bollards and other items that may be furnished by this subcontractor and installed by others should be included in this filed sub trade.

Also ships ladders, metal brackets etc. should be included in this section.

Many off-the-shelf or shop-fabricated items, such as louvers, joists hangers, manhole covers, etc., are not required filed sub-bid items and should be in other sections. The same is true for structural steel, all of which should be specified in other sections to avoid an unnecessary filed sub-bid.

Coordination of contract documents is imperative to avoid having items not covered by the contract or covered in two sections.

DESIGN

Design exterior items with concealed connections and no field welding. Review shop drawings carefully in order to avoid unsightly field welding.

EXECUTION

When galvanized items must be field welded, cut or are damaged specify required touch up with zinc rich paint in conformance with ASTM A780 such as ZRC, or ZiRP by Duncan, or another equal.

Loose lintels are typically supplied by the miscellaneous iron subcontractor and installed by the masonry subcontractor.